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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,051	08/26/2003	Stephan Limper	HK-769	7384

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EXAMINER	
VALONE, THOMAS F	
ART UNIT	PAPER NUMBER
2858	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary	Application No.	Applicant(s)	
	10/650,051	LIMPER ET AL.	
	Examiner	Art Unit	
	Thomas F. Valone	2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 January 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9 and 12-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,12-16 and 18* is/are rejected.

7)☒ Claim(s) *17* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 December 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 2, 5, 6 – 9, 12, 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Menard of record in view of Higashi (6,935,237).

Regarding claims 1 and 12, Menard teaches an apparatus for detecting a material of a surface of a flat object on a stack of flat objects, the flat objects being printing plates (media plate M, Fig. 7A and col. 13, line 41), separated by interlayers (interleaf, col. 13, line 44) in the stack (cassette, col. 13, line 12) with a sensor apparatus (149, Fig. 7a) containing a sensor carrier (151, Fig. 7a), electronics (controller 21, col. 13, line 43), and electrodes (153, 155, Fig. 7a) resting on the surface of a flat object for conducting a measuring current through the surface of the flat object (col. 13, line 61), and the sensor electronics having an evaluation device for distinguishing between the underside of printing plates (col. 13, line 45) and the interlayers (controller 21, col. 13, line 43).

Menard does not explicitly use an evaluation device for distinguishing between an exposure layer of the printing plates, though the rear underside may actually be the exposure layer (col. 13, line 10-20).

Higashi from the same field of endeavor, teaches an evaluation device that distinguishes between an interlayer (interleaf paper, col. 5, line 33), the sensitive lithographic printing plate (col. 5, line 34) and a dummy plate (col. 5, line 34), which can be regarded as an unusable plate (col. 10, line 1-20), similar to the rear of the plate of the instant application.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have added an evaluation device of Higashi to the apparatus of Menard for the purpose of discriminating between the exposure layer of the printing plates, interlayers, and an unusable rear dummy plate.

Regarding claims 2 and 14, Menard inherently measures resistance and conductivity with his conductive paper sensor (149, Fig. 7a) which measures current flow (col. 13, line 60-65) and its inverse, resistance (no current flow, col. 13, line 65) on the surface of a flat object.

Regarding claims 6 and 18, Menard teaches a surface detection of a flat object of metal and paper (col. 13, line 40-45).

Regarding claim 7, Menard teaches a loading device for printing plates and the sensor is integrated into the loading device (cassette, col. 13, line 12).

Regarding claim 8, the lifting and suction elements for gripping the printing plates with the lifting device integrated into the lifting device is taught by Menard (col. 14, line 38).

Regarding claims 5 and 9, Menard's conductive paper sensor detects the absence of an interleaf which may be on the underside of the metal media printing plate

that would cause a short-circuit for the two-electrode sensors. Therefore, Menard inherently teaches a short-circuit detector as well.

3. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Menard and Higashi (M-H) in view of Pratt (5,899,313).

The teachings of M-H are reviewed above.

M-H does not teach varying a frequency of the measuring current using a controllable frequency generator; carrying out a plurality of measurements at different frequencies; and distinguishing a surface material by depending on the frequency of the voltage which is applied to the sensor electrodes.

Pratt, from an analogous field of endeavor, teaches varying a frequency of the measuring current (output of 741, Fig. 4) using a controllable frequency generator (Wein bridge oscillator, Fig. 4 and col. 4, line 11); carrying out a plurality of measurements at different frequencies (col. 3, line 14); and distinguishing a surface material by depending on the frequency of the voltage (voltage controlled oscillator, col. 4, line 25) which is applied to the sensor electrodes (frequency capture range, col. 3, line 1-10).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a controllable frequency generator as suggested by Pratt to carry out a plurality of measurements at different frequencies in M-H's surface material sensor, for the benefit of distinguishing surface materials depending on the frequency of the voltage which is applied to the sensor electrodes.

4. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Menard and Higashi (M-H), in view of Ganton of record.

Regarding claim 13, the teachings of M-H are reviewed above.

M-H does not teach measuring current with a frequency generator by applying high frequency voltage to the sensor electrodes. However, it is also well known in electrical circuit design that generating a measuring current is inherent and required to a measurement of voltage, especially to charge up capacitors and also, every current measurement necessitates a voltage measurement, as implied by claim 13.

Ganton, from the same field of endeavor, teaches a measuring current with a frequency generator by applying high frequency voltage to the sensor electrodes (1, Fig. 1). Ganton also uses an operational amplifier (7, Fig. 1) which is known in the art to only operate by measuring input current, no matter how small.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used Ganton's high frequency generator with the apparatus of M-H to generate a measuring current by applying high voltage to sensor electrodes for detecting the material of a surface of a flat object since the high frequency impedance between surfaces varies widely, making detection easier.

Regarding claim 3, the teachings of M-H are reviewed above.

M-H does not explicitly teach sensor electrodes containing a frequency generator connected to them, a rectifier connected to the sensor electrodes, a measurement amplifier connected to the rectifier, comparators connected to the amplifier and an evaluation unit connected to the comparators.

Ganton teaches a frequency generator (1, Fig. 1) connected to sensor electrodes, a rectifier (8, Fig. 1), a measurement amplifier connected to the rectifier (11,

Fig. 1) which is also a comparator. The evaluation unit is implicitly part of the sensor electronics since the comparator (11, Fig. 1) must output to some type of evaluation unit, as is well known in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used Ganton's frequency generator connected to sensor electrodes of M-H with rectifier and comparator amplifier for the purpose of evaluating the surface material of printing plates which may contain paper interlayers that need to be detected and removed efficiently.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Menard and Higashi (M-H) and further in view of Ganton and Nakamura of record.

The teachings of M-H are reviewed above.

M-H does not explicitly teach sensor electrodes containing a frequency generator connected to them, a rectifier connected to the sensor electrodes, a measurement amplifier connected to the rectifier, an A-D connected to the amplifier and an evaluation unit connected to the A-D converter.

Ganton teaches a frequency generator (1, Fig. 1) connected to sensor electrodes, a rectifier (8, Fig. 1), a measurement amplifier connected to the rectifier (11, Fig. 1) which is also a comparator. The evaluation unit is implicitly part of the sensor electronics since the comparator (11, Fig. 1) must output to some type of evaluation unit, as is well known in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used Ganton's frequency generator connected to sensor

electrodes of M-H with rectifier and comparator amplifier for the purpose of evaluating the surface material of printing plates which may contain paper interlayers that need to be detected and removed efficiently.

M-H as modified by Ganton (M-H-G) does not teach an analog to digital converter connected to the amplifier and with the evaluation unit connected to the analog to digital converter (ADC).

Nakamura, from the same field of endeavor, teaches an ADC (74, Fig. 37 and col. 9, line 58) and a comparator evaluation unit (202, Fig. 37) connected to the ADC.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used Nakamura's ADC and evaluation unit with the sensor electronics of M-H-G for the purpose of digitizing the signal for better and more precise analysis and storage.

6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Menard and Higashi (M-H) and further in view of Nakamura of record.

The teachings of M-H are reviewed above, which imply the conversion of any measuring current into a measuring voltage.

M-H does not explicitly convert the measuring current into a measuring voltage and recognize the material forming the surface from a voltage range in which the measuring voltage lies.

Nakamura teaches the conversion of a measuring current into a measuring voltage (col. 9, line 10 –18) and recognizes the material forming the surface from a

voltage range in which the measuring voltage lies (basis of reference voltage, col. 9, line 18-22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used Nakamura's voltage conversion of the measuring current with the sensor electronics of M-H for the express purpose of recognizing the material forming the surface from a voltage range in which the measuring voltage lies, with the benefit of an efficient use of the comparator.

Allowable Subject Matter

7. Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: A method for detecting a material of a surface of a flat object on a stack of flat objects being printing plates, which are separated by interlayers using sensor electrodes resting on the surface of the flat object and connected to sensor electronics for conducting a measuring current through the surface of the flat object; distinguishing between an exposure layer of the printing plates, the interlayers, and a rear of the printing plates, as well as evaluating measuring voltages determined from the plurality of measurements to detect the material of the surface, depending on the frequency of the voltage that is applied to the sensor electrodes, before providing the printing plates for further processing, has not been found in the prior art.

Response to Arguments

Acknowledgement is given for the amendment to the drawings which has overcome the objection to the drawings. Regarding the argument about Menard not distinguishing between different surfaces of printing plates, though his conductivity sensor has the inherent capability of doing so, applicant's amendment necessitated the new ground(s) of rejection presented in this Office action, so the argument is moot. The rest of the arguments seem to repeat the viewpoint that the secondary references (e.g. Pratt, Nakamura) don't make up for the deficiencies of Menard which is also moot in view of the new grounds of rejection.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mouri teaches an image forming device with a printing plate; Masuda teaches an electrophotography apparatus with a conductive printing plate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas F. Valone whose telephone number is 571-272-8896. The examiner can normally be reached on 10-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on 571-272-2168. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TV

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